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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/511,226	01/12/2005	Roland Kaplan	F-8412	2067

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Jordan & Hamburg
122 East 42nd Street
New York, NY 10168

EXAMINER

NGUYEN, HUNG

ART UNIT	PAPER NUMBER
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2851

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/511,226

Applicant(s)

KAPLAN ET AL.

Examiner

Hung Henry V. Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 18-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 18-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/12/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: on page 20, line 6, reference to "operator's computer 13" should read -- operator's computer 30--.

On page 24, lines 12-14, the equation is missing.

Appropriate correction is required.

Abstract

2. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract is objected to because the recitation of "means" in line 3 should be omitted.

Correction is required.

Claim Objections

3. Claims 19, 29-38 are objected to because of the following informalities:
 - a. The dependency of claim 19 can not be determined.
 - b. As to claims 19, 28, 30, 31, 36, the functional "whereby" statements render the claims unclear since it has been held that the functional "whereby" statement does not define any

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structure and accordingly can no serve to distinguish. *In re Mason*, 114 USPQ 127, 44 CCPA 937 (1957). Furthermore, it has been held that the recitation that an element an element “can be created” for performing a function is not a positive limitation but only require the ability to so perform. It does not constitute a limitation in any patentable sense. *In re Hutchinson*, 69 USPQ 138.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 18-38 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are generally narrative and indefinite, failing to conform with current U.S. practice. They appear to be a literal translation into English from a foreign document and are replete with grammatical and idiomatic errors.

Claims 18, 21, 22, 24, 26, 28, 30, 31 are indefinite due to the alternative limitations recited in the claims (such as: and/or). It is unclear which of the recitations is encompassed by the claims.

As to claim 23, the recitation of “said illumination dots is softly shielded” is vague and indefinite. That is, when a term of degree is used as a limitation, it is necessary to determine whether the specification provides some standard for measuring that degree. In this case, the

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specification does not enable one skilled in the art to reasonably establish what may be construed as being within the metes and bounds of the term of degree. Therefore, one of ordinary skill in the art would not be apprised as to the claimed invention's scope when the claims are read in light of the specification.

As to claim 30, the recitation of "wherein image field of said optical/and or the individually image created by means thereof is smaller than the entire image of said mask" is vague and indefinite. There are means of illumination unit, and means of optical unit, therefore it is not clearly understood what "means" the applicant refers to?

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

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7. Claims 18-38 are rejected under 35 U.S.C. 102(e) as being anticipated by Yanagihara et al (U.S.Pat. 6,552,775).

As best the claimed subject matters are understood (see rejection under 35 U.S.C. 112, second paragraph, supra. Claims are anticipated by reference.

With respect to claim 29, Yanagihara et al (figure 1) discloses an exposure apparatus for projecting a desired pattern formed on a mask (10) onto a substrate (14) and comprising all structures set forth in the claim such as: a mechanical unit (15, 20) on which the mask and the substrate are positioned spaced from one another and the mechanical unit include X driver (see col.21, line 60-61); an illumination unit (1-8) for providing an illumination dot on the mask and the substrate. The illumination intensity of the illumination dot has a Gaussian distribution (see col.7, lines 42-65) and includes in an optical path (AX) between the mask the substrate an optical unit (12) of which an illumination dot is imaged on the substrate. Yanagihara further discloses the mechanical unit being adapted for fixed unchangeable receiving of the mask and the substrate during exposing and being movably scanned relative to the illumination unit and the optical unit (12) which are securely coupled to one another (see figure 1). Yanagihara discloses the optical unit (12) has at least one active displacement element for displacing the illumination dot on the substrate and the displacement element being controllable as function of distortions of the substrate (see col.9, lines 40-62; col.11, lines 17-27). For the purpose of exposing the pattern of the mask (10) in the irradiating region to the substrate (14), the pattern of the mask (10) being defined by the partial regions (11a-11e) constituting the illumination field diaphragms the exposure apparatus (1) is provided with five optical projection systems (12a-12e) so that the illumination dot are created on the substrate in individual images overlapping edge areas, and the

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illumination dots are created with their edge areas overlapping on the mask the illumination unit wherein the illumination intensity in the edge areas is smaller by a desired amount than in the center of the illumination dots/Gaussian distribution and the individual images, each of the individual images corresponds to an illumination dots, are positioned overlapping and continuously joined to one another on the substrate by the active displacing element as a function of the distortion of the substrate (see col.8, lines 43-59).

With respect to claim 30, Yanagihara et al disclose the image filed of the optical unit (12) and/or the individual image created is smaller than the entire image of the mask (10) and a computer system (50) for controlling the active displacing element/(120a-e) so that the distortions caused by the mask and the substrate can be corrected.

As to claim 31, Yanagihara teaches a cage (101) for mutual fixed and spaced arrangement of the mask and the substrate and an optical unit and the illumination unit are mechanically coupled to one another and arranged movable relative to the cage whereby the cage is movable relative to the optical unit and the illumination unit (see figure 22).

As to claims 32-33, Yanagihara et al disclose the optical system (12) comprising imaging optic with a 4 fold arrangement and having two lenses or lens systems and the mask (10) being arranged in a front focal point of the first lens system (32) and the substrate (14) being arranged in a back focal point of the second lens, the ray path being point-reflected via a retroreflector (43) in front of the first lens or after the second lens (see figure 2).

With respect to claim 34, Yanagihara et al discloses a correction unit(120) for displacing the image perpendicular to the optical axis (AX) in the image plane.

As to claims 35-36, Yanagihara et al teaches a plane parallel plate (41, 42), a mirror (31) that is tiltably arranged perpendicular to entering and exiting ray bundle and a retroreflector (see figures 2-3) that is displaceable perpendicular to the optical axis so that the light path in the imaging optic (12) can be adjusted for precisely transferring images onto the substrate.

As to claim 37, Yanagihara et al discloses that the illumination unit (1-8) generates plural illumination dots on the mask (10) and the apparatus further has a corresponding number of optical units (107a-107e) (see figure 23) with imaging and correction units for creating at least two or more individual images on the substrate.

With respect to claim 38, Yanagihara et al teaches copying simultaneously of the mask on one substrate and the illumination unit has a beam splitter (7) arranged in the optical path between the mask (10) and the substrate (14) such that a plurality of individual images can be created on the substrate.

With respect to claims 18-28, the claimed method is seen to be inherent teachings in existence of the above apparatus.

Prior Art Made of Record

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Komatsuda (U.S.Pat. 6,833,904); Ozawa et al (U.S.Pat. 5,739,898) and Yanagihara (U.S.Pat. 5,999,244) disclose exposure devices, each of which comprises substantially all elements as recited in the instant claims of the present invention.

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hung Henry V Nguyen
Primary Examiner
Art Unit 2851

hvn
4/27/06